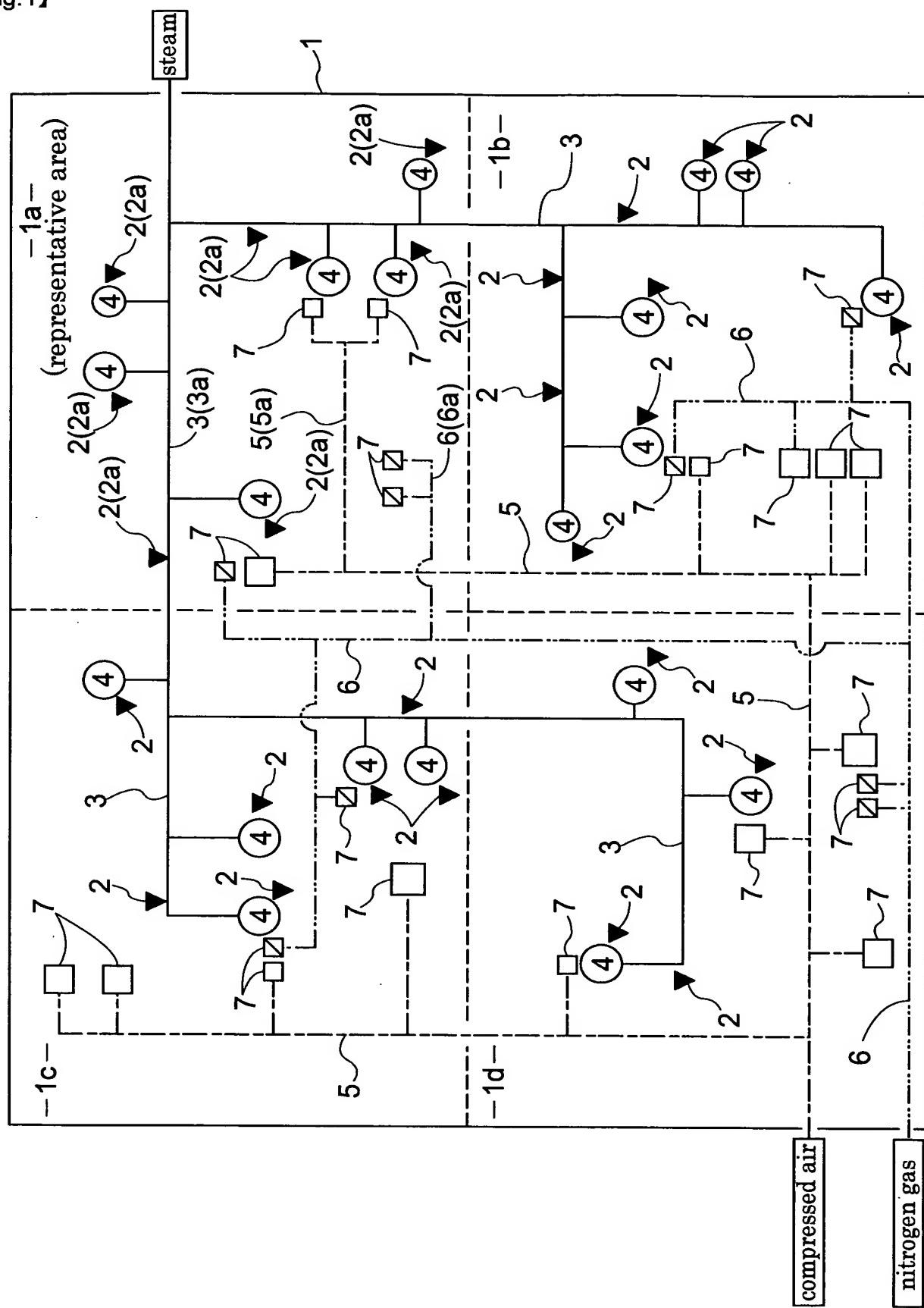
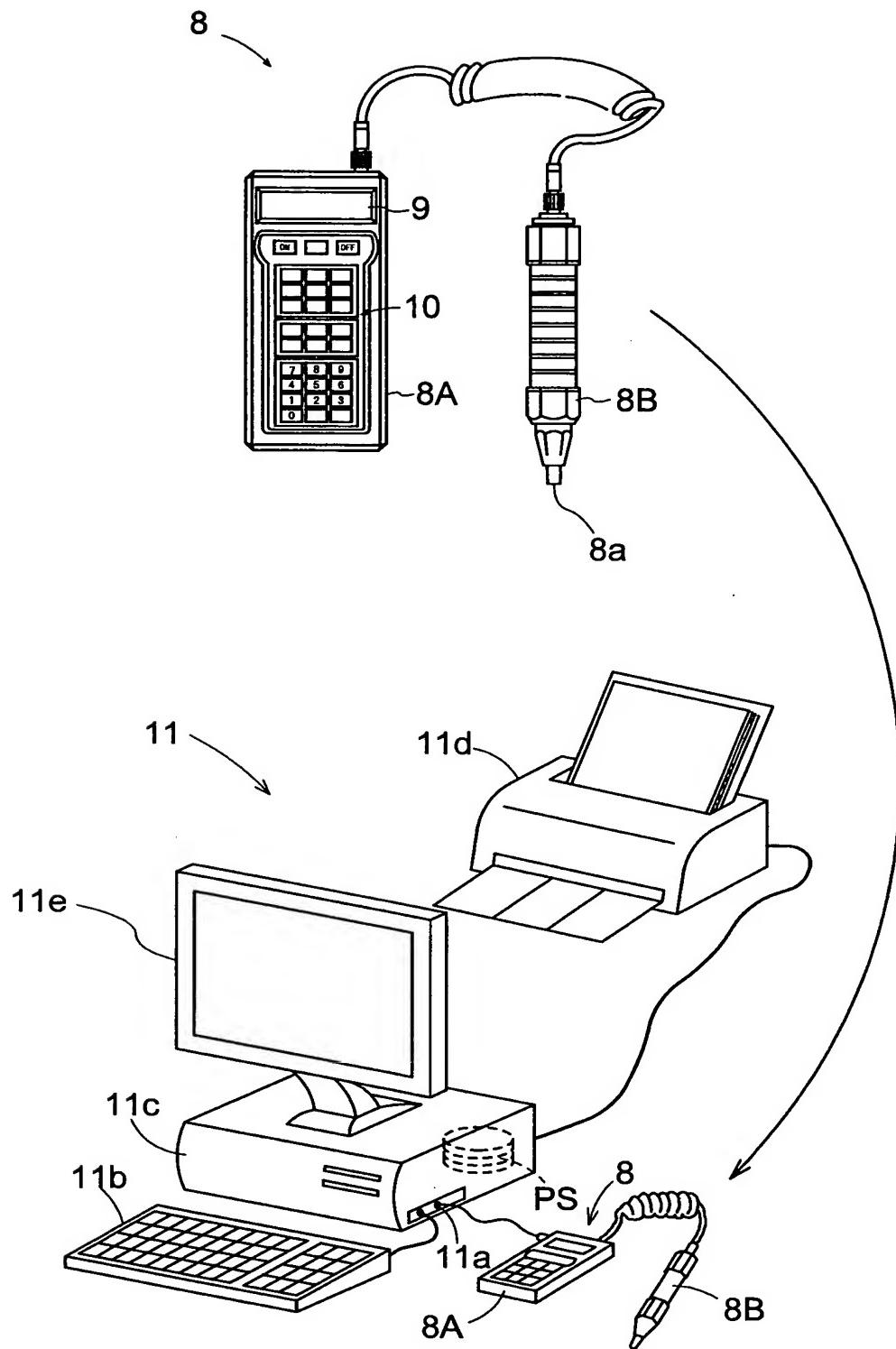


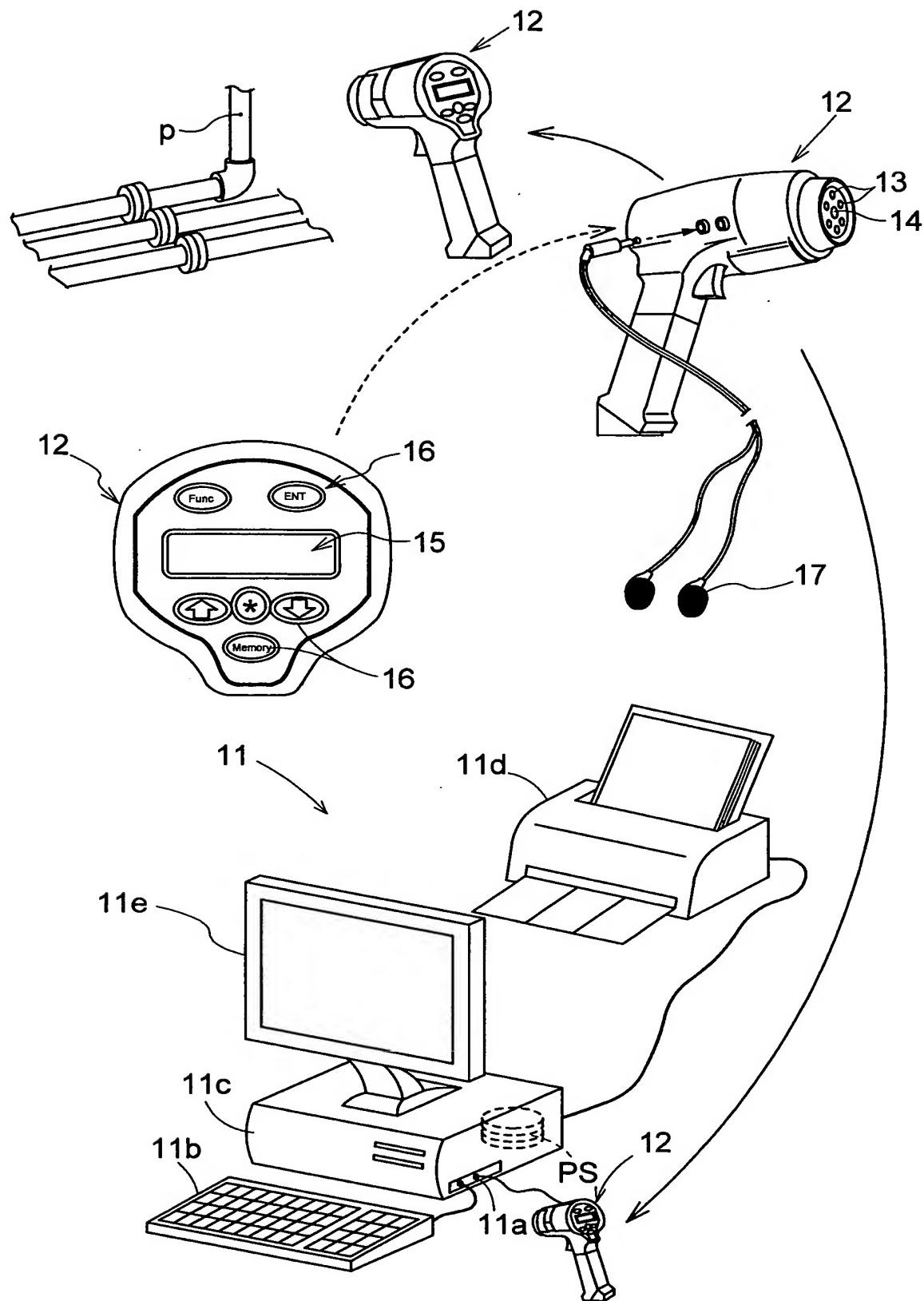
[Fig. 1]



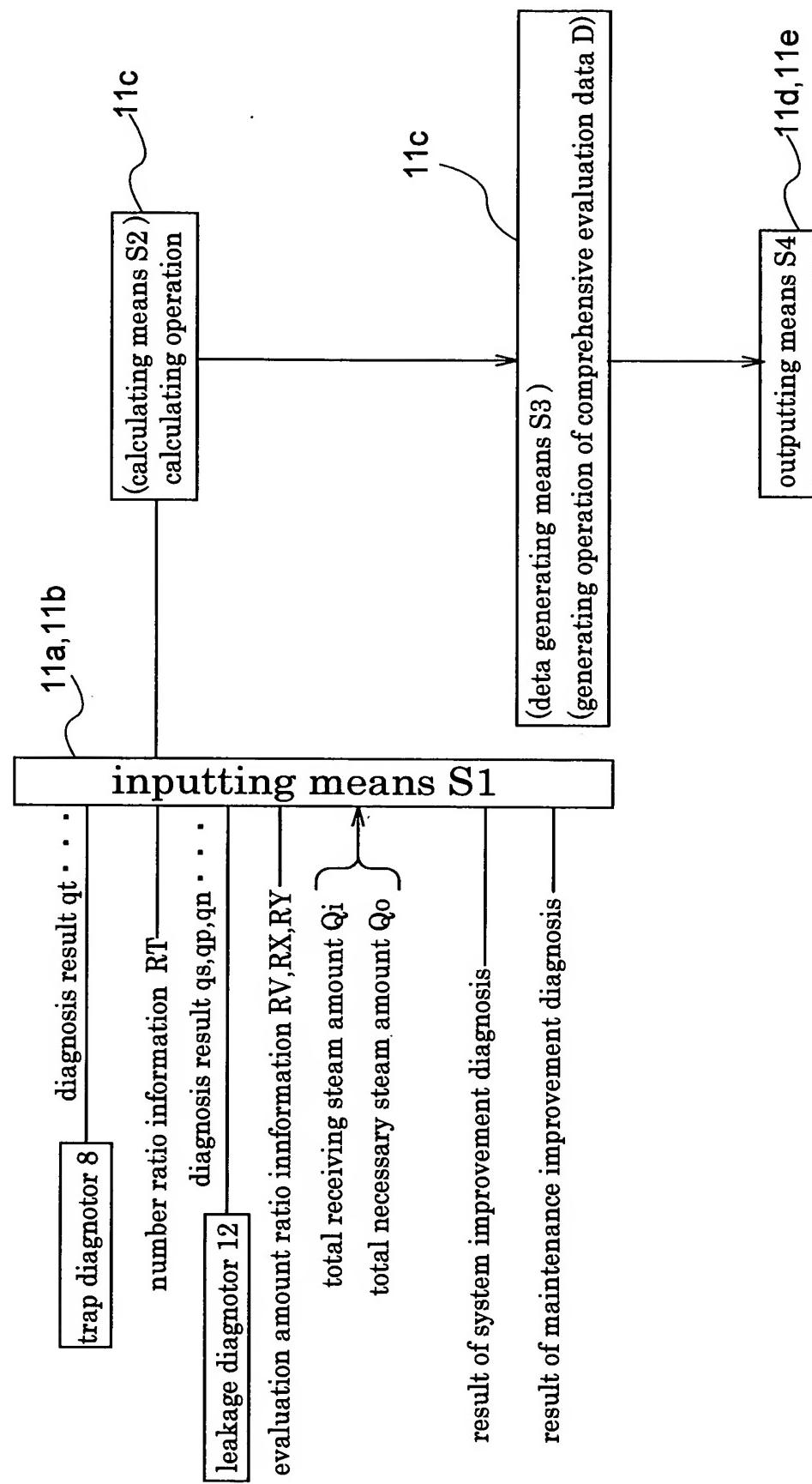
【Fig.2】



【Fig.3】



[Fig.4]



[Fig.5]

11c

(calculating means:S2)
calculating operation

number of all representative steam traps T_a ————— trap defect ratio K_t
number of defective traps T_x

trap-passed steam loss sub total Σq_t (trap defect)
and
its monetary converted value $M \Sigma q_t$

numbers for respective usages and respective types $T_{a1}, T_{a2} \dots$
classified values for respective usages and respective types $M \Sigma q_{t1}, M \Sigma q_{t2} \dots$
defect ratio $K_{t1}, K_{t2} \dots$

simulation number ratio α
deduced value of total trap-passed steam loss amount Q_t (trap defect)
and
its monetary converted value $M Q_t$

trap-passed steam loss sub total $\Sigma \Delta q_t'$ (trap type)
deduced value of total trap-passed steam loss amount Q_t' (trap type)
and
its monetary converted value $M Q_t'$

sum total trap-passed steam loss amount $Q_t'' = (Q_t + Q_t')$
and
its monetary converted value $M Q_t''$

number of leaking points N_s, N_p, N_n
valve defect ratio K_v

fluid leakage loss sub total for each fluid type $\Sigma q_s, \Sigma q_p, \Sigma q_n$
and
its monetary converted value $M \Sigma q_s, M \Sigma q_p, M \Sigma q_n$

installed valve number ratio value V/V_a , piping amount ratio value $X/X_a, Y/Y_a$,
deduced value of total fluid leakage loss amount Q_s, Q_p, Q_n for each type
and its monetary converted value $M Q_s, M Q_p, M Q_n$

total unknown steam amount $Q_x (=Q_i - Q_o)$,
and its monetary converted value $M Q_x$
unknown steam ratio K_x
sum total steam loss amount $Q_{ts}(Q_t'' + Q_s)$,
and its monetary converted value $M Q_{ts}$
improvable unknown steam ratio K_{ts}
basis unknown steam amount $Q_{xx} (=Q_x - Q_{ts})$
improved unknown steam ratio K_{xx}

【Fig.6】

report

date of diagnoses
day / month / year

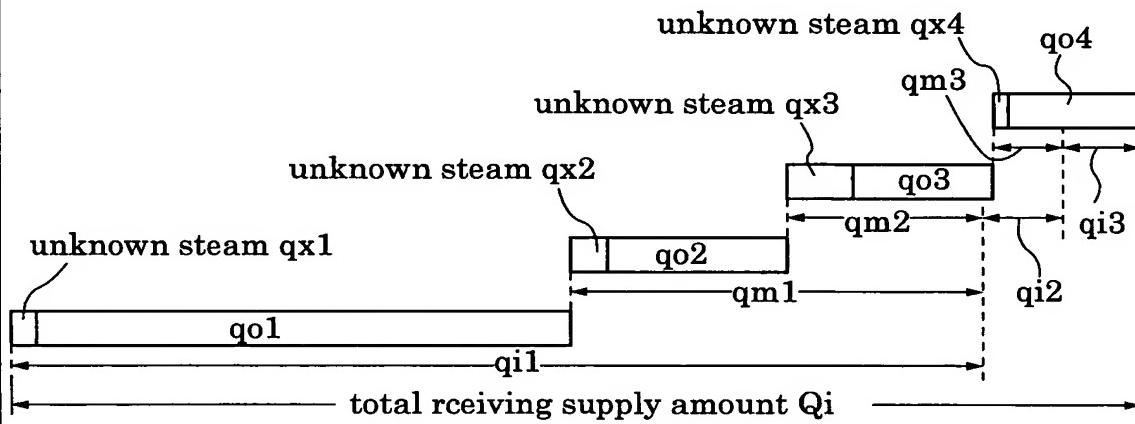
【Fig.7】

steam input/output

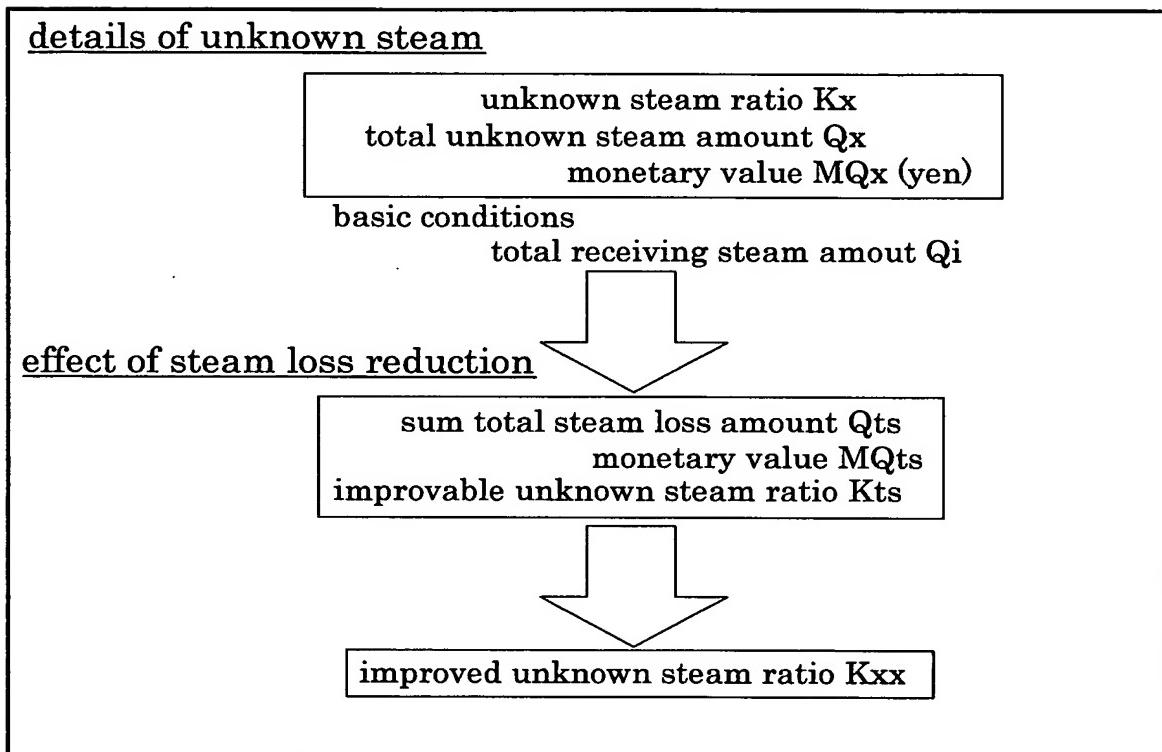
total receiving steam amount $Q_i = q_{i1} + q_{i2} + q_{i3}$

total necessary steam amount $Q_o = q_{o1} + q_{o2} + q_{o3} + q_{o4}$

total unknown steam amount $Q_x = q_{x1} + q_{x2} + q_{x3} + q_{x4} = (Q_i - Q_o)$



【Fig.8】



【Fig.9】

results of trap operation diagnosis and fluid leakage diagnosis

① trap operation diagnosis trap defect ratio Kt

loss amount [monetary value of trap-passed steam loss

sub total Σqt (trap defect):M Σqt]

number diagnosed Ta

<for respective usages>

Ta1 Kt1 M Σqt_1
Ta2 Kt2 M Σqt_2

<for respective types>

Ta3 Kt3 M Σqt_3
Ta4 Kt4 M Σqt_4
⋮

(simulation number ratio: α)

[loss amount]

total number of steam traps:T

monetary value of total trap-passed steam loss amount Qt (trap defect):MQt

monetary value of total trap-passed steam loss amount Qt' (trap defect):MQt'

sum total

monetary value of sum total-trappassed steam loss amount Qt":MQt"

② steam piping leakage diagnosis (number of valves Va)

valve defect ratio Kt (number of leaking portions Ns)

loss amount [monetary value of steam leakage loss sub total Σqs :M Σqs]



[loss amount]

total number of valves V

monetary value of total steam leakage loss amount Qs:MQs

③ non-steam piping leakage diagnosis

<compressed air>

number of leaking portions Np,
leakage loss sub total Σqp ,
monetary value M Σqp

<nitrogen gas>

number of leaking portions Nn,
leakage loss sub total Σqn ,
monetary value M Σqn

<compressed air>

monetary value of total leakage loss amount Qp:MQp

<nitrogen gas>

monetary value of total leakage loss amount Qn:MQn

【Fig.10】

result of system improvement diagnosis

① system improvement proposal 1

monetary value of effect Ma1
cost Ha1

② system improvement proposal 2

monetary value of effect Ma2
cost Ha2

result of maintenance improvement diagnosis

① method improvement proposal 1

monetary value of effect Mb1
cost Hb1

② method improvement proposal 2

monetary value of effect Mb2
cost Hb2

【Fig.11】

conclusion of diagnoses

[steam]

effect:

monetary value MQts of sum total steam loss amount Qts
cost:Hts

[non-steam fluids]

<compressed air>

effect:

monetary value MQp of total leakage loss amount Qp for compressed air
cost:Hp

<nitrogen gas>

effect:

monetary value MQn of total fluid leakage loss amount Qn for nitrogen gas
cost:Hn

[system]

effect:

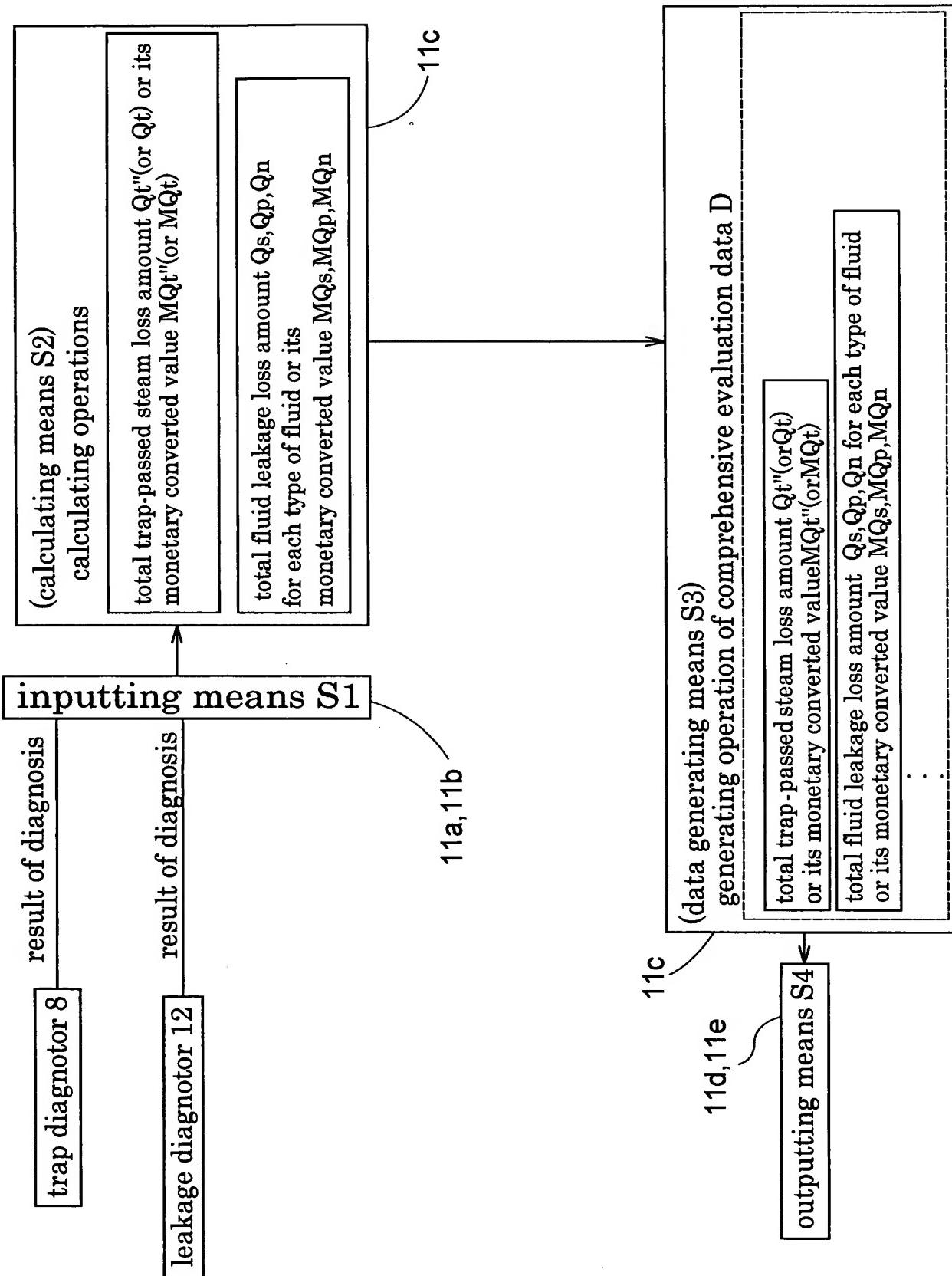
monetary value Σ Ma
cost: Σ Ha

[maintenance]

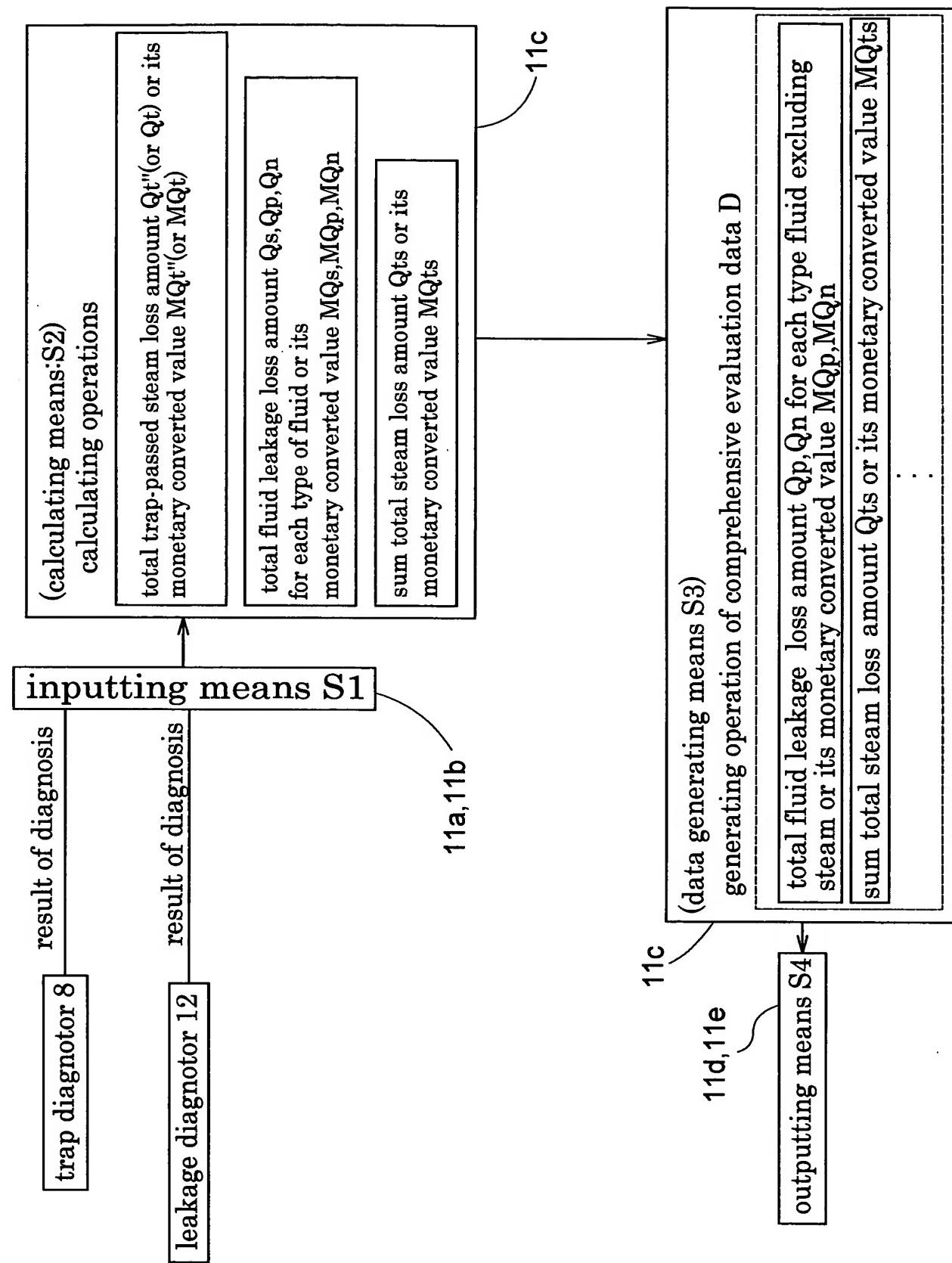
effect:

monetary value Σ Mb
cost: Σ Hb

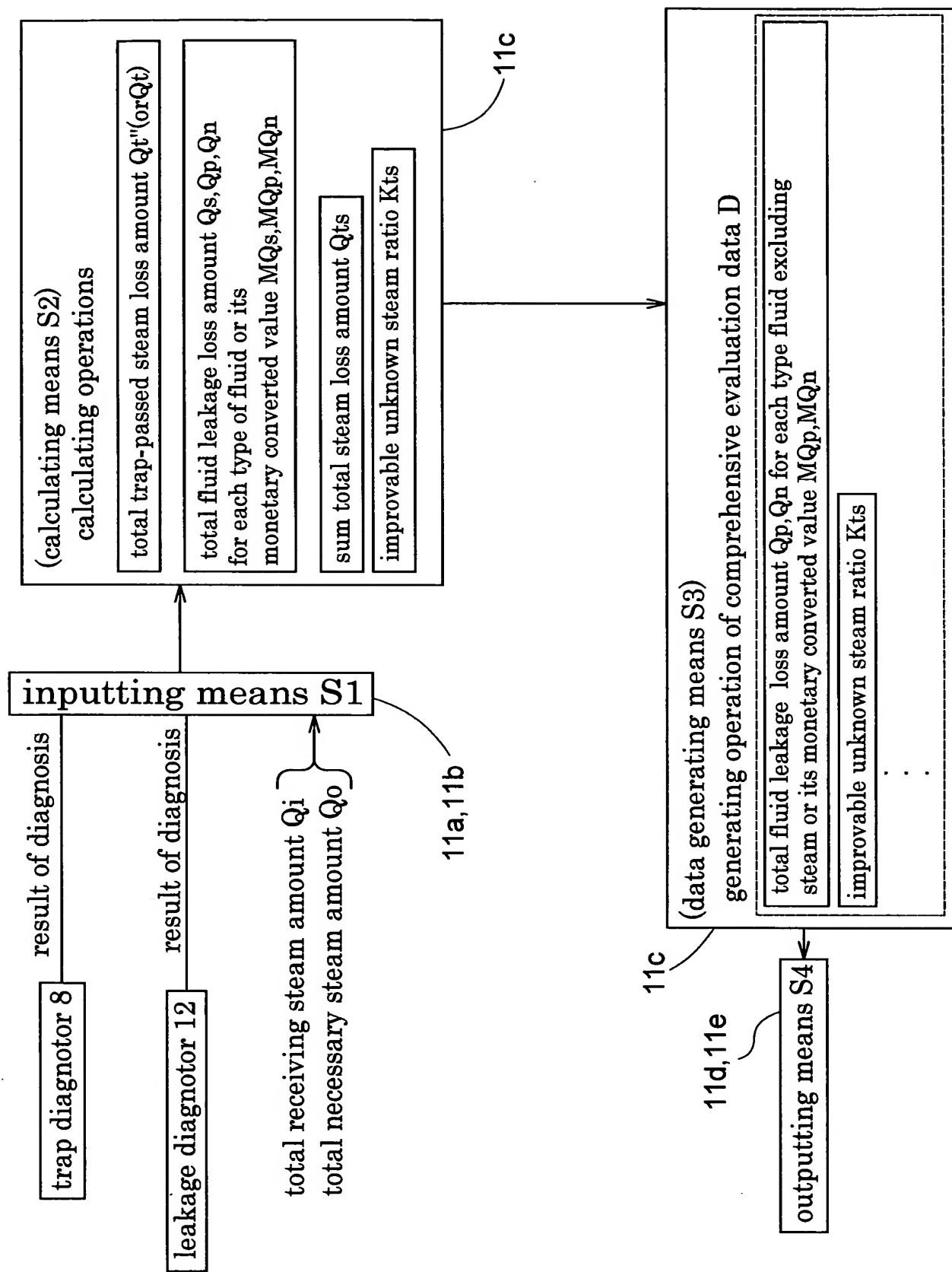
[Fig.12]



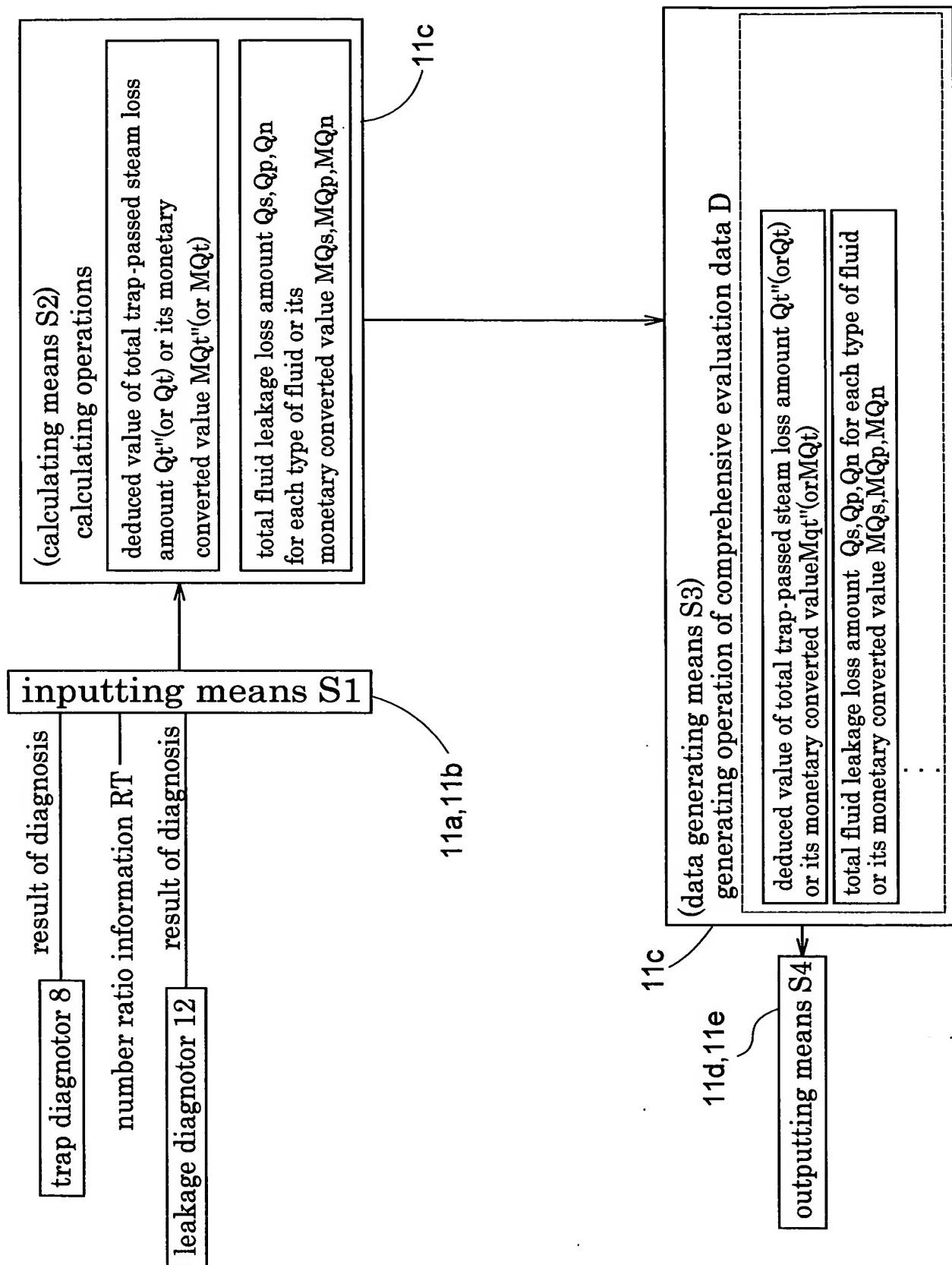
【Fig.13】



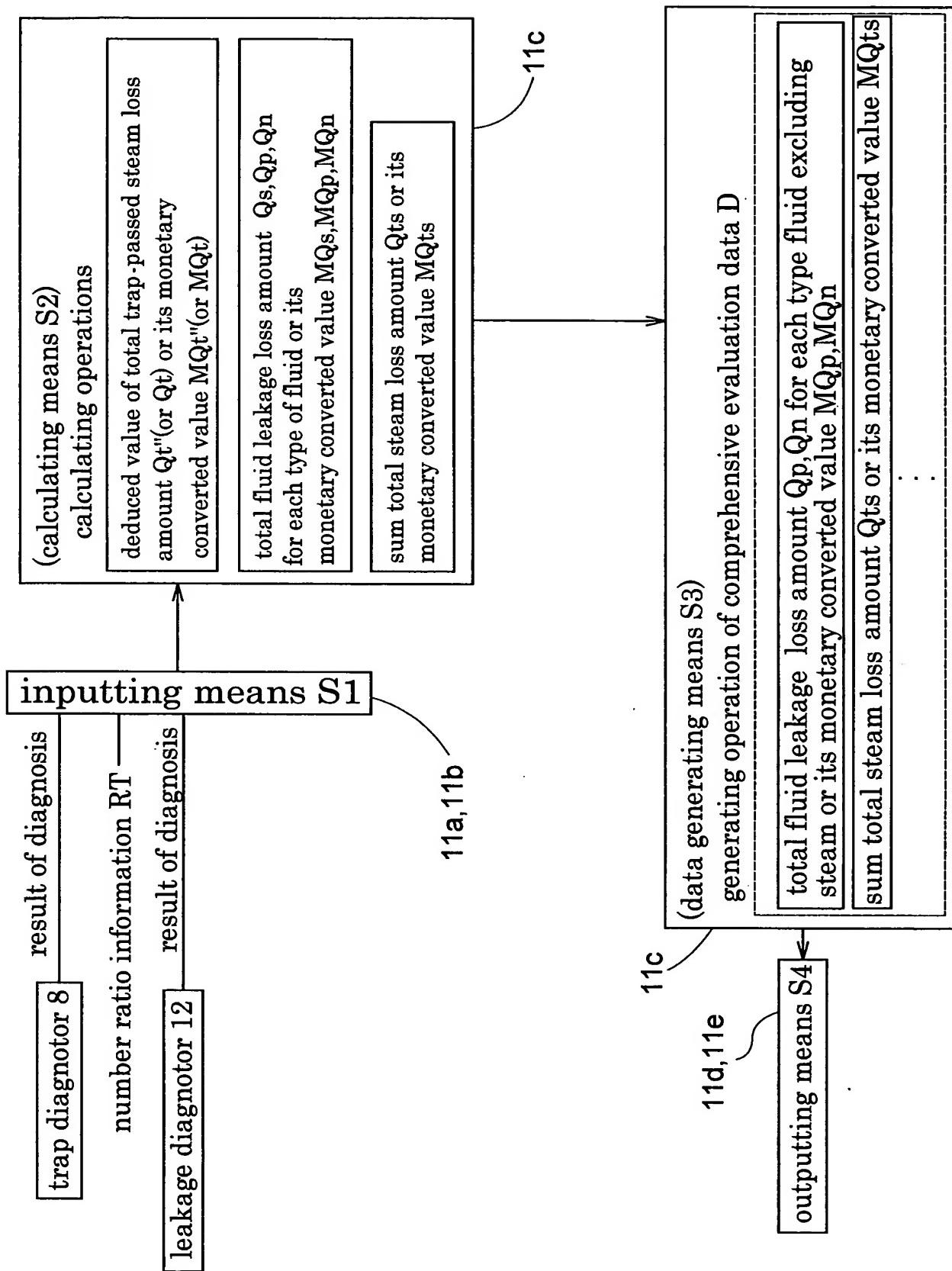
【Fig.14】



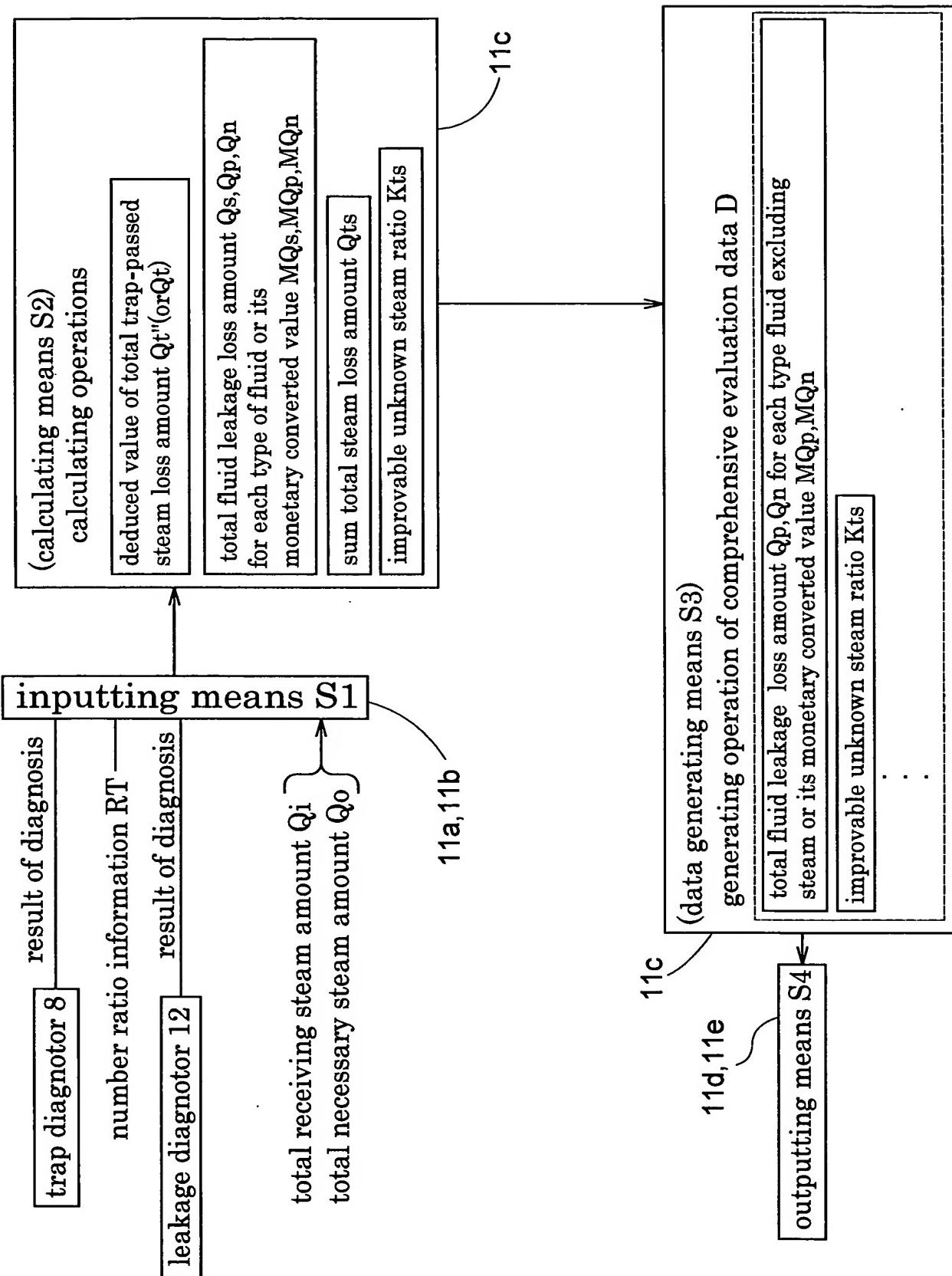
[Fig.15]



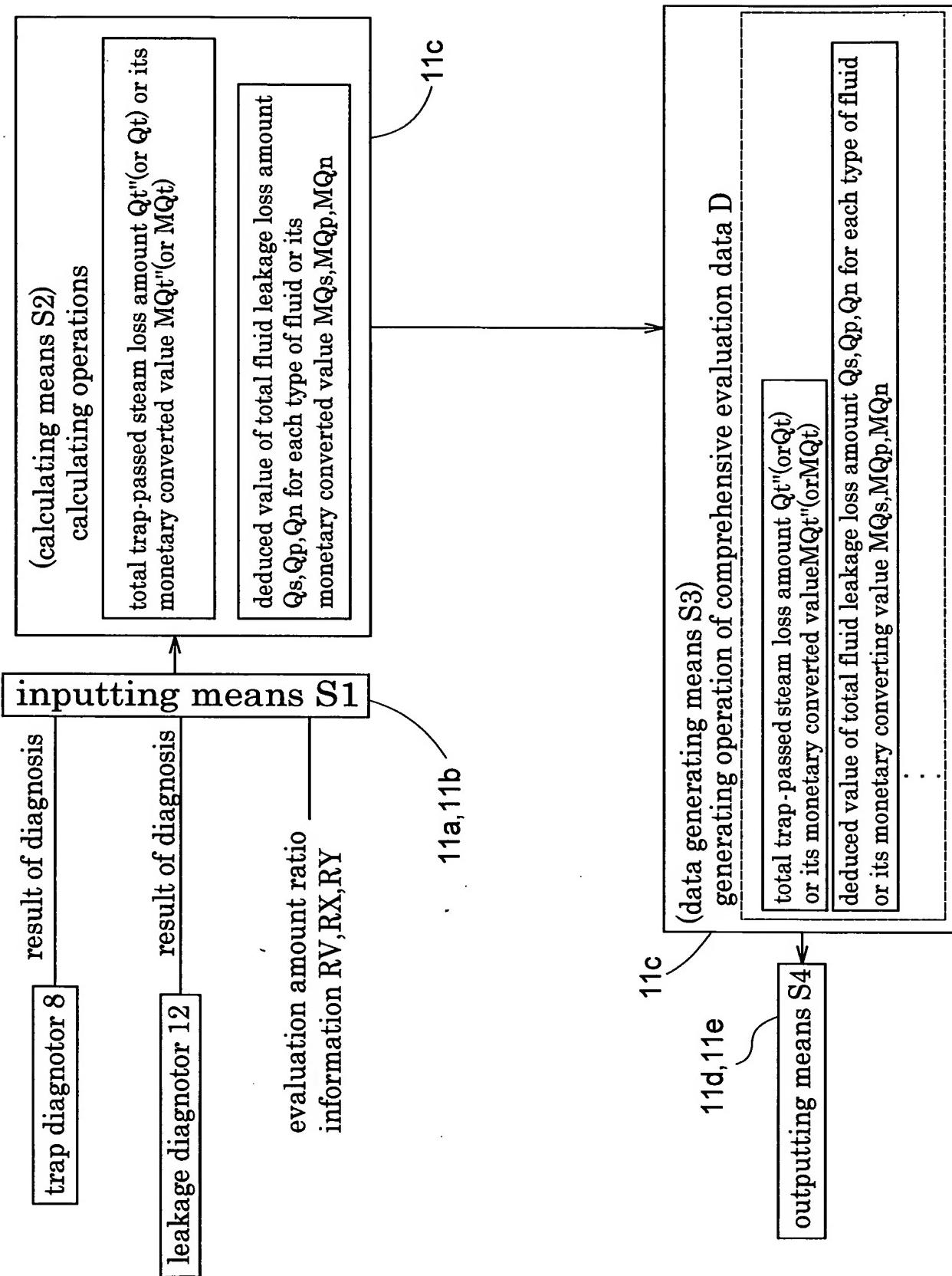
[Fig.16]



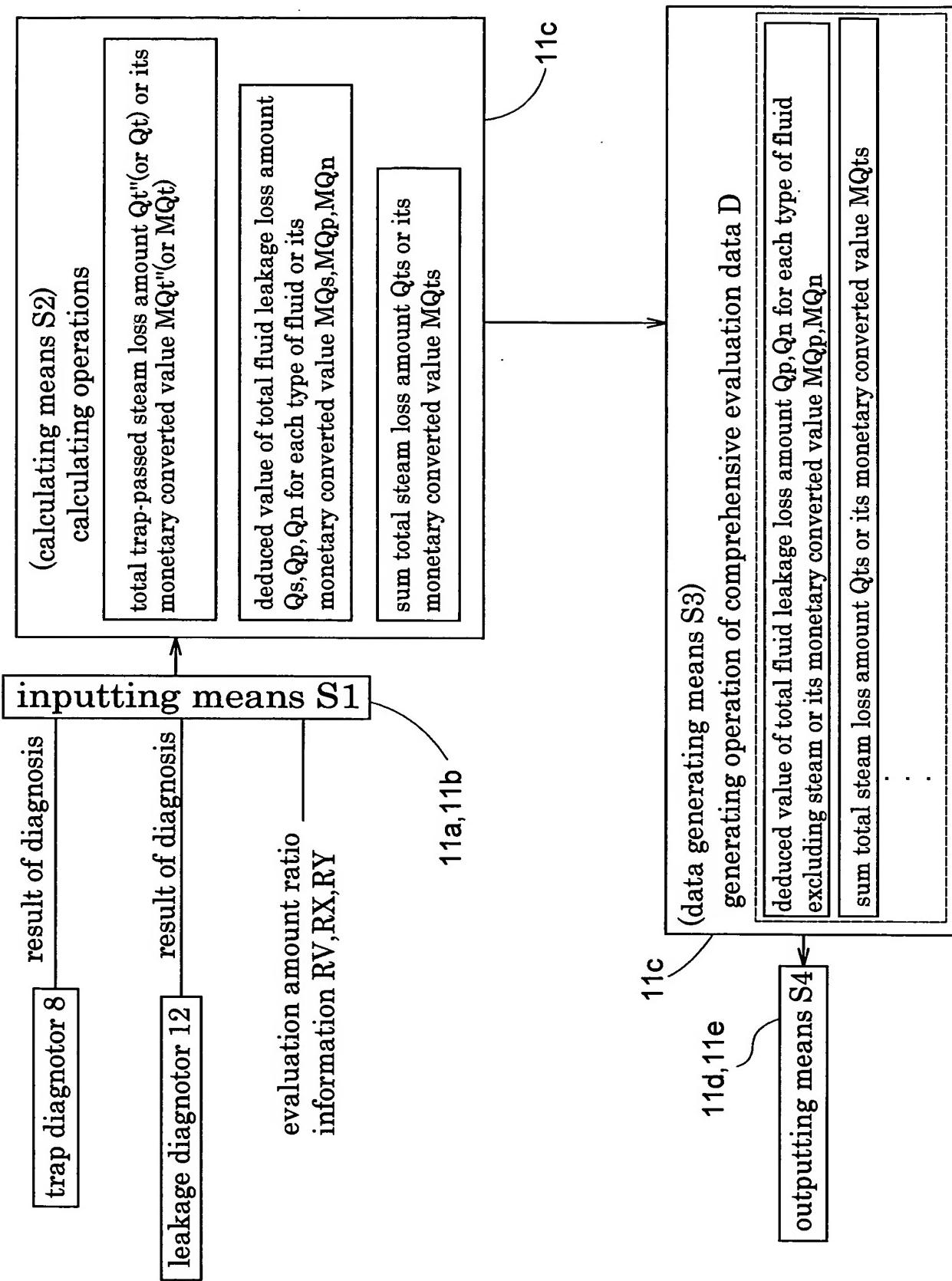
【Fig.17】



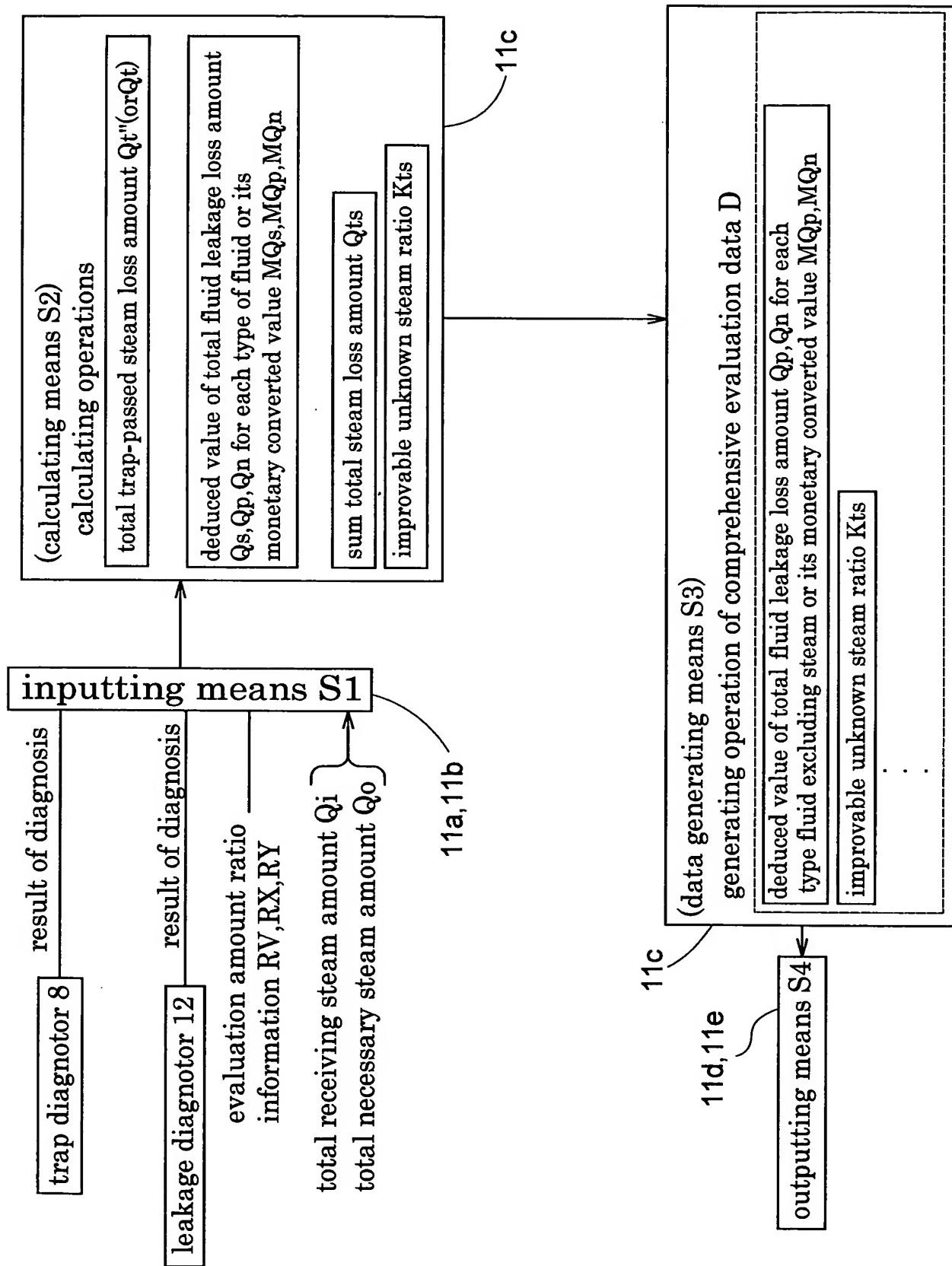
[Fig.18]



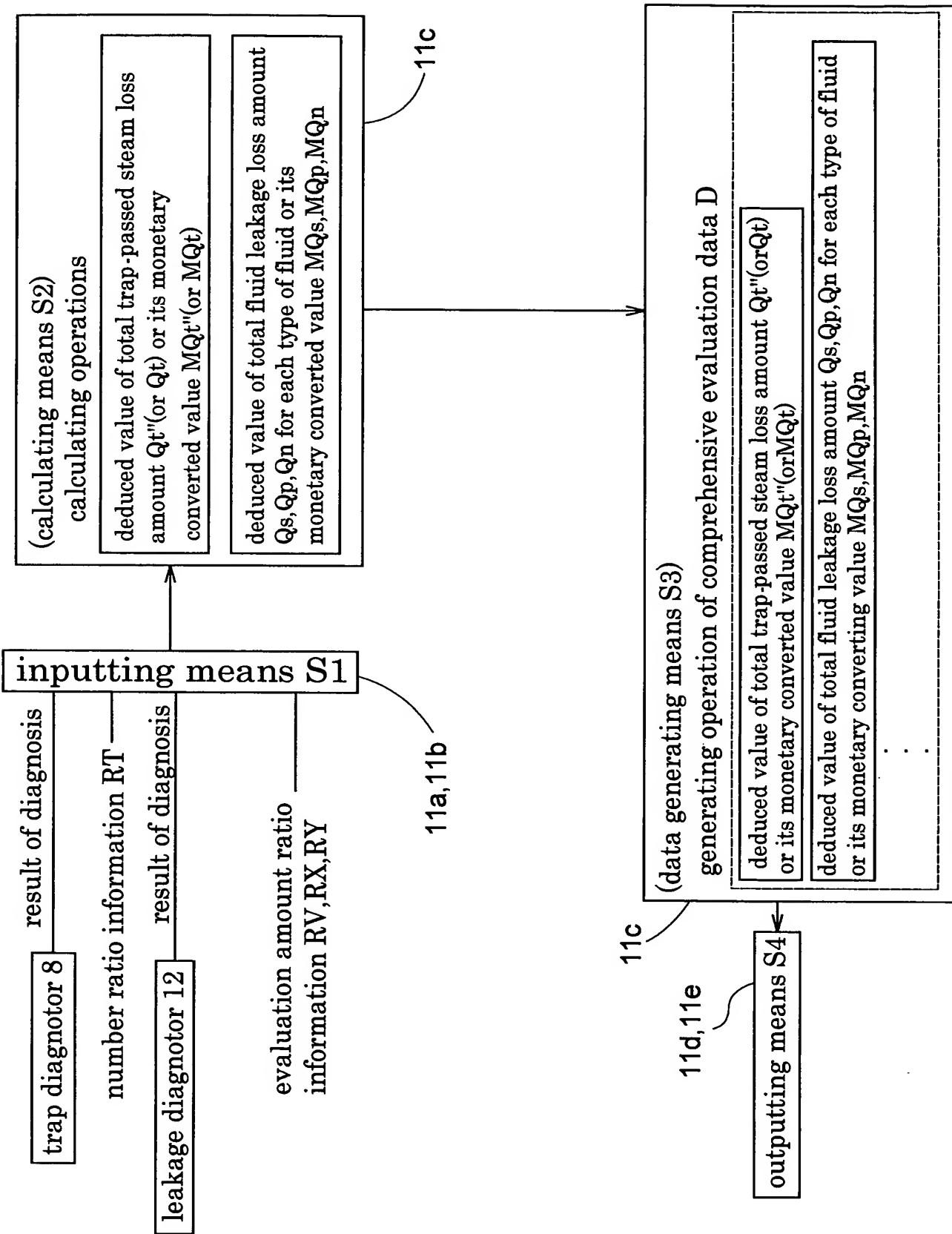
[Fig.19]



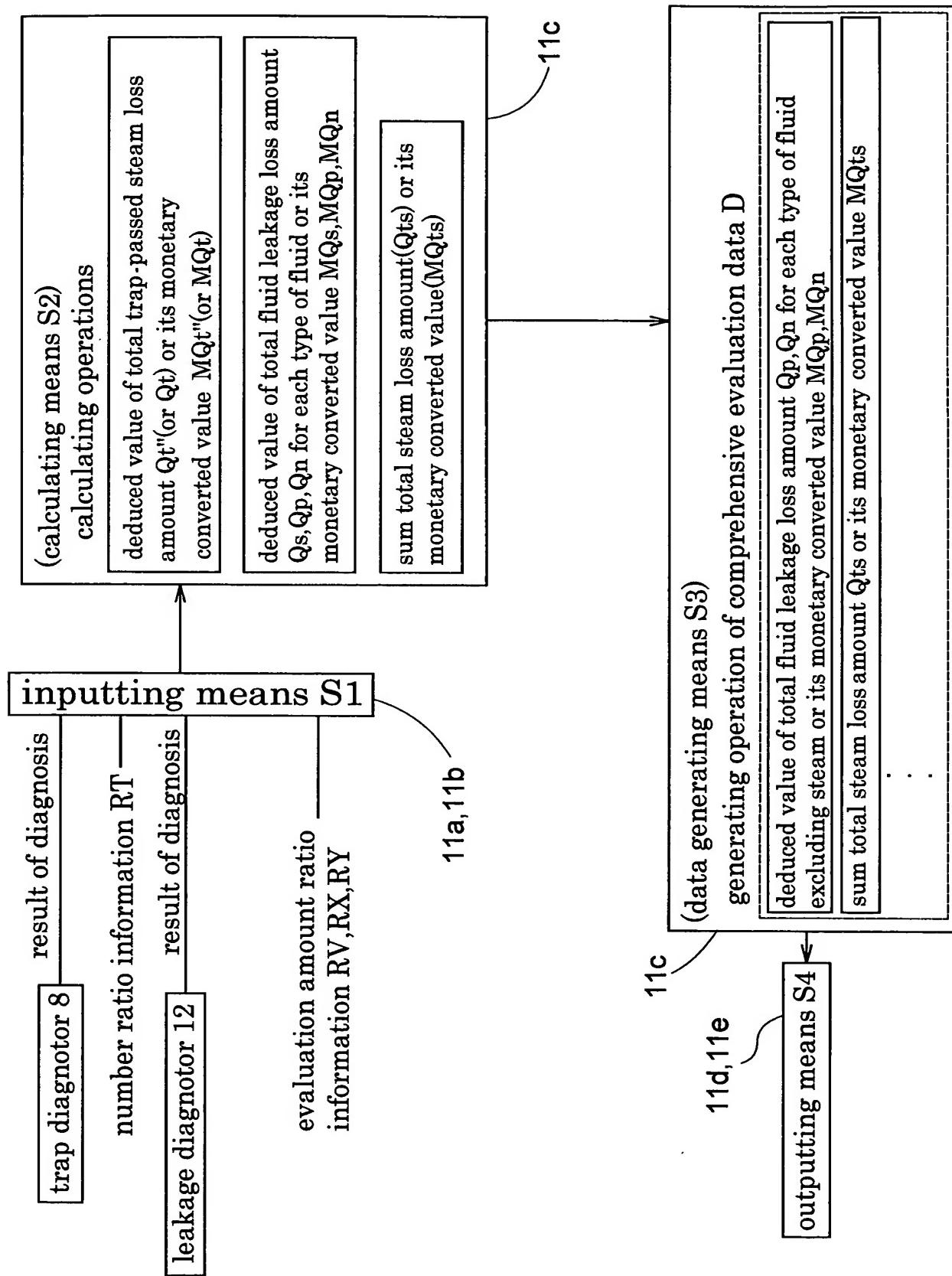
【Fig.20】



【Fig.21】



【Fig.22】



【Fig.23】

